

ABSTRACT

Disclosed is a gas turbine power generating system capable of achieving a high output power and a high power generating efficiency under conditions with a small amount of supplied water and less change in design of a gas turbine.

A fine water droplet spraying apparatus (11) is disposed in a suction air chamber (22) on the upstream side of an air compressor (2), and a moisture adding apparatus (7) for adding moisture to high pressure air supplied from the compressor (2) is disposed. A regenerator (5) for heating the air to which moisture has been added by using gas turbine exhaust gas as a heat source is also provided. With this configuration, there can be obtain an effect of reducing a power for the compressor (2) and an effect of increasing the output power due to addition of moisture to air (20) for combustion. Further, since the used amount of fuel is reduced by adopting a regenerating cycle, the power generating efficiency is improved.